

ABSTRACT OF THE DISCLOSURE

**RADIOLIGANDS FOR THE TRP-M8 RECEPTOR AND METHODS
THEREWITH**

5 One embodiment of the invention is a composition that comprises a radioactive [¹⁸F], [¹²³I], [¹²⁵I], or [¹³¹I]-N-radiohaloaryl-alkylcarboxamide molecule. The composition binds to the transient receptor potential-M8 (TRP-M8) receptor of cells. The TRP-M8 receptor is selectively expressed in sensory neurons and in malignant tissues such as prostate cancer cells. The [¹⁸F], [¹²³I], [¹²⁵I], or [¹³¹I]-N-
10 radiohaloaryl-alkylcarboxamide ligand may be used for radioreceptor binding studies, for diagnostic studies, and for radiotherapy of cancerous tissues. Affinity of the [¹²⁵I] or [¹³¹I]-N-radiohaloaryl-alkylcarboxamide ligand for the TRP-M8 receptor confers selectivity and specificity in delivering lethal radiation to the diseased cells.